

Remarks

The present paper is in response to the Office Action mailed in the above-referenced case on February 20, 2002, and is filed with a Petition to Revive the case as unintentionally abandoned.

In the action claims 1-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Horbal, (US 6,112,246), hereinafter Horbal, in view of Sandelman (US 6,160,477) hereinafter Sandelman. In the rejection of the independent claims it is the Examiner's position that Horbal discloses the applicant's invention substantially as claimed, except for the claimed RF interface, for which the Examiner relies on Sandelman. The applicant respectfully disagrees, and maintains that Horbal falls far short of teaching all of the claimed limitations except the RF communication.

Horbal fairly teaches a microserver having its own TCP/IP stack and HTML code, connected intimately to an appliance or device, wherein the microserver publishes status information as a web page. The system of Horbal is dedicated to monitoring, and has no teaching for remote configuration of functionality of an appliance. Arguably, Horbal, through OEM code at the microserver might initiate some function of a connected appliance, such as changing a thermostat setting, as in Fig. 3 of Horbal and the accompanying text in column 3 lines 25 through 35. The key here is that the device function is stored locally, at the appliance, and no re-definition of what the device does can be made remotely.

An ability to redefine and control functions of a connected device from a remote site is a patentable feature in applicant's independent claims, and this is what was meant by downloaded code and data. Accordingly applicant has herein amended all of the independent claims, and some of the depended claims as well, to make it clear that it is a step sequence that may be conceived at a web site and then sent to a control unit connected to an appliance. The applicant's disclosure has extensive teaching regarding programming the appliances, etc., and a program is a step sequence.

As a specific example, any appliance may have a base set of functions, such as valves open or closed, heating elements on or off, motor-driven elements movable to

different positions, and the like. A program for such an appliance involves a sequential operation of the base-level functions. In Horbal any such program is only at the appliance and not re-definable remotely. In applicant's claimed invention the program may be redefined and new programs (step sequences) sent to the appliance.

Further to the above, which alone is sufficient for patentability, there is no teaching or suggestion in Horbal for grouping of appliance control in the area of a home or business as taught and claimed by applicant, which would allow for a minimization of the considerable functionality of the microserver at the appliance as in Horbal. Horbal clearly teaches away from the claimed invention in this respect, teaching a high-level microserver at each appliance, each enabled to directly communicate with the Internet.

Applicant believes the claims, as amended herein to more particularly point out and distinctly claim the subject matter believed to be patentable, are patentable over the references cited and applied, as pointed out above. As all of the claims as amended are patentable to the Applicant over the art of record, the Applicant respectfully requests reconsideration and that the case be passed quickly to issue. If there are any extensions of time required beyond any extension specifically petitioned and paid with this response, such extensions are hereby requested. If there are any fees due beyond any fees paid by check with this response, authorization is given to deduct such fees from deposit account 50-0534.

Version With Markings to Show Changes Made

1. (Once Amended) A control unit [to facilitate remote programming for local control of systems and appliances] for monitoring conditions at and controlling functions of an appliance in response to a step sequence received from a remote server, comprising:

a microcontroller for managing functions of the control unit;

an input-output (I/O) section coupled to the microcontroller for interfacing voltage levels between elements of the [systems and appliances] appliance and the microcontroller;

a system memory for storing [executable code and data] the step sequence received from the remote server;

a wiring interface for connecting input and output points from the control unit to the system or appliance; and

[an RF section] a wireless communication interface [communicating with the microcontroller and memory] for receiving [programs and data] the step sequence;

characterized in that, with connections made between the wiring interface and the controlled [system or] appliance, the microcontroller [provides] generates outputs to operate functions [on the system or appliance in response execution of control code and stored data by the microcontroller, the control code and data received via the R/F section] operate the appliance according to the step sequence received.

2. (Once Amended) The control unit of claim 1 wherein the microcontroller produces control outputs partly in response to input from sensors on the controlled [system or] appliance.

4. (Once Amended) The control unit of claim 1 wherein the microcontroller monitors sensors, whether internal or on the controlled system or appliance, and transmits status data via the [RF section] wireless communication interface.

5. (Once Amended) A method for controlling [a system or] an appliance, comprising steps of:

(a) connecting a control unit to elements of the appliance by a wiring interface, the control unit comprising a microcontroller for managing functions of the control unit, an input-output (I/O) section coupled to the microcontroller for interfacing voltage levels between elements of the appliance [the systems and appliances] and the microcontroller, a system memory for storing [executable code and data] a step sequence received from a remote server, a wiring interface for connecting the elements of the appliance [input and output points from] to the control unit [to the system or appliance], and a wireless communication interface for receiving the step sequence [an RF section communicating with the microcontroller and memory for receiving programs and data];

(b) receiving [control code and data from a remote location by RF signals] the step sequence via the [RF section] wireless communication interface; and

(c) operating [functions on] the [system or] appliance [in response to execution of the received control code and data by the microcontroller] according to the step sequence received.

6. (Once Amended) The method of claim 5 wherein, in step (c) the microcontroller produces control outputs partly in response to input from sensors on the controlled [system or] appliance.

8. (Once Amended) The method of claim 5 further comprising a step (d) for monitoring sensors, whether internal or on the controlled system or appliance, and transmitting status data via the [RF section] wireless communication interface.

9. (Once amended) A base station for managing one or more control units in a home or business control system, the control units connected to individual ones of appliances in the home or business, comprising:

a microcontroller for managing functions of the base station;
[system] memory coupled to the microcontroller for storing one or more step sequences to be performed by one or more of the [executable code and data needed in base station functions];

a communication port for communicating with the Internet; and
[an RF section] a wireless communication interface;
characterized in that the base station receives [control code and data] the one or more step sequences via the communication port, and transmits [the control code and data] individual ones of the step sequences to appropriate control units via the [RF section to the one or more control units for use in controlling systems and appliances] wireless communication interface.

10. (Once Amended) The base station of claim 9 wherein the communication port is one of a standard serial or parallel communication port compatible with a personal computer (PC) and wherein the PC handles communication with the Internet for receiving [control code and data] step sequences, and transfers the [control code and data] step sequences to the base station.

11. (Once Amended) The base station of claim 9 wherein the base station records and identifies all remote control units [in its range] within range of its wireless communication interface, and selectively transmits [data and control code] step sequences to the control units via the [RF section] wireless communication interface, the incoming [control code and data] step sequences being identified for individual ones of the control units.

13. (Once Amended) The base station of claim 9 wherein the base station receives status data via the [RF section] wireless communication interface from control units, and transmits the status data [identified according to the control unit providing the status data,] to the Internet.

14. (Once Amended) A method for managing [control] functions for a plurality of [systems and] appliances in a home or business [area], the [systems and] appliances connected to control units having each [an RF section] a wireless communication interface for receiving [control code and data] step sequences and transmitting data, the method comprising steps of:

- (a) identifying each control unit uniquely electronically;
- (b) providing a single base station in the home or business [area], the base station having a port for communication with the Internet and [an RF section] a wireless communication interface for communicating with the plurality of control units; and
- (c) downloading [control code and data] individual step sequences from an Internet site by the base station, the individual step sequences identified for individual ones of the control units, and transmitting the downloaded [control code and data] step sequences selectively to the individual ones of the control units.

16. (Once Amended) The method of claim 14 wherein the communication port is one of a standard serial or parallel communication port compatible with a personal computer (PC) and wherein a connected PC handles communication with the Internet for receiving [control code and data] the step sequences, and transfers the [control code and data] step sequences to the base station.

17. (Once Amended) A control system for [systems and] appliances in a home or business area, comprising:

- a plurality of control units, individual ones of the units wired to sensors and actuators of individual ones of the [systems and] appliances, the control units having each a microcontroller, a system memory, [and] an I/O section, and [an RF section] a wireless communication interface for external communication;

- a base station [in the home or business area] having a communication port to the Internet and [an RF section] a wireless communications interface for communicating with the plurality of control units; and

- an Internet site executing software enabling a subscriber associated with the home or business [area] to interact with the base station;

- characterized in that the Internet site software provides an interface for the subscriber to review status of systems and appliances having connected control units in the associated home or business [area], and to [enter control code and data] author step sequences addressed for individual ones of the control units in the home or business [area].

21. (Once Amended) The control system of claim 17 wherein the subscriber has a specific web page on the Internet site, wherein all configured, installed and active control units in the home or business [area] with which the subscriber is associated are indicated.

22. (Once Amended) The control system of claim 21 wherein the base station, through the respective [RF sections] wireless communication interfaces, configures any new control unit brought into the home or business [area] by adding the control unit to a list managed by the base station, including assigning the control unit an address, and communicating to the associated web site details regarding the new control unit in a manner that the subscriber may monitor and control the [system or] appliance associated with the new control unit through the web site.

24. (Once Amended) A method for managing control functions for a plurality of [systems and] appliances in a home or business [area], comprising steps of:

(a) connecting a control unit to each [system or] appliance, each control unit enabled to receive input from sensors on the appliance and to actuate functions of the [system or] appliance to which it is connected, with each control unit having [an RF section] a wireless communication interface for receiving [control code and data] step sequences and transmitting data;

(b) identifying each control unit uniquely electronically;

(c) providing a single base station in the home or business area, the base station having a port for communication with the Internet and [an RF section] a wireless communication interface for communicating with the plurality of control units;

(d) downloading [control code and data] step sequences from an Internet site by the base station identified for individual ones of the control units, and transmitting the downloaded [control code and data] step sequences selectively to the individual ones of the control units; and

(e) providing a web site where a subscriber associated with the home or business [area] may access a web page having an interface for displaying status of each active control unit in the home or business [area], and allowing the subscriber to enter

[functions and data] one or more step sequences for controlling the active control units in the home or business [area].

25. (Once Amended) An Internet subscription service having a system comprising a plurality of web pages specific to individual subscribers, and accessible interactively by the subscribers through any Internet appliance;

characterized in that the system communicates for each web page and subscriber with a base station at a home or business site associated with the subscriber, wherein individual base stations stream status information regarding [systems and] appliances at the home or business site to the web site for posting on the associated web pages, and [commands and data] step sequences entered by a subscriber in a web page for a specific site are streamed to the base station at the home or business site.

Respectfully,
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